<u>REMARKS/ARGUMENTS</u>

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-3 are pending in the application. Claims 1-3 are amended; and Claims 5-14 are canceled without prejudice or disclaimer by the present amendment. Claims 2-3 are amended to clarify that 35 U.S.C. § 112, sixth paragraph, is not invoked by these claims. Support for the amended claims can be found in the original specification, claims and drawings.[1] No new matter is presented.

In the outstanding Office Action, Claims 1-3 were rejected under 35 U.S.C. § 112, second paragraph; Claims 1-3 were provisionally rejected on the grounds of non-statutory obviousness-type double patenting as unpatentable over Claims 1-35 of co-pending Application No. 10/490,208 in view of U.S. Pat. 7,245,774 (herein, the '774 patent), and Claims 1-37 of co-pending Application No. 10/490,855 in view of the '774 patent; Claims 1-3 were rejected under 35 U.S.C. § 103(a) as unpatentable over the '774 patent in view of Swonger (U.S. Pat. 4,754,490) and Gaffin et al. (U.S. Pat. 6,625,317, herein Gaffin); and Claims 1-3 were rejected under 35 U.S.C. § 103(a) as unpatentable over Golin (U.S. Pat. 6,058,143) in view of Swonger and Gaffin.

With regard to the provisional non-statutory double patenting rejection of Claims 1-3, this rejection is respectfully traversed in light of the Terminal Disclaimer submitted herewith.

The filing of a Terminal Disclaimer to obviate a rejection based on non-statutory double patenting is not an admission of the propriety of the rejection. The "filing of a Terminal Disclaimer simply serves the statutory function of removing the rejection of double patenting, and raises neither a presumption nor estoppel on the merits of the rejection." *Quad Environmental Technologies Corp. v. Union Sanitary District*, 946 F.2d 870, 20 USPQ2d

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[1] E.g., specification, Fig. 7.

is provided for facilitating a timely resolution to prosecution only, and should not be interpreted as an admission as to the merits of the obviated rejection.

Regarding the rejection of Claims 1-3 under 35 U.S.C. § 103(a) as unpatentable over the '774 patent in view of <u>Swonger</u> and <u>Gaffin</u>, Applicants respectfully submit that the '774 patent is not available as prior art under 35 U.S.C. § 103, as next discussed.

Applicants note that the '774 patent qualifies as prior art only under 35 U.S.C. §102(e), as the present application priority date (and filing date) predates the publication date (and the filing date) of the '774 patent. To the extent the rejection above applies to Claims 1-3, Applicants respectfully traverse the rejections.

As the '774 patent is §102(e) art, the obviousness rejection is deficient under 35 U.S.C. §103(c) as explained below.

Applicants submit that the present application and the '774 patent were, at the time the present invention was made, owned by, or subject to an obligation of assignment to Sony Corporation. Accordingly, application of the '774 patent in this obviousness rejection is improper.[2]

As the above noted rejection under 35 U.S.C. § 103(a) relies on the '774 patent, Applicants respectfully submit this rejection is traversed as the '774 patent may not be applied as a basis for supporting a *prima facie* case of obviousness as outlined by 35 U.S.C. §103(c).

Claims 1-3 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite because "the different between 'an address corresponding to a feature value that is based on values of said each pixel and a plurality of pixels peripheral to said each pixel' and 'an address corresponding to a feature of a target pixel' is unclear."

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[2] Applicant notes that the filing date of the present application is after November 29, 1999, therefore bringing the present application under the current guidelines for 35 U.S.C. §103(c) for excluding 102(e) art.

In response, independent Claims 1-3 are amended to recite "...detecting the position information stored at an address corresponding to a feature value that is based on a value of the target pixel of which a motion vector is to be determined or a pixel peripheral to said target pixel of the second frame, the feature value representing said feature of said target pixel..."

Support for the above noted amendments can be found at least at p. 20 of the specification, which describes that the feature extracting unit 64 extracts a feature of each pixel on the frame (a reference frame Fr) that is input from the frame memory 63 as in the case in which the feature extracting unit 62 extracts a feature of the target pixel P. Thus, the position information that the first detecting means detects is not position information of the target pixel, but that of the candidate pixels from the reference frame (i.e. the first frame). Accordingly, it is not important where the position information of the target pixels is stored.

Accordingly, Applicants respectfully request that the rejection of Claims 1-3 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claims 1-3 were rejected under 35 U.S.C. § 103(a) as unpatentable over Golin in view of Swonger and Gaffin. Applicants respectfully traverse this rejection, as independent Claims 1-3 recite novel features clearly not taught or rendered obvious by the applied references.

Amended independent Claim 1 recites, in part, an image processing apparatus for compressing an input image using a motion vector, the image processing apparatus comprising:

> ...storing means for storing position information of each pixel of a first frame that is earlier in time than a second frame at an address corresponding to a feature value that is based on a value of said each pixel or a pixel peripheral to said each pixel, the feature value representing a feature of said each pixel;
> first detecting means for *detecting the position information stored at an address corresponding to a feature value that is based on a value of the target pixel of which a*

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> *motion vector is to be determined or a pixel peripheral to said*
> *target pixel of the second frame, the feature value*
> *representing said feature of said target pixel...*

Independent Claims 2 and 3, while directed to alternative embodiments, recite similar features. Accordingly, the remarks and arguments presented below are applicable to each of independent Claims 1-3.

Turning to the applied primary reference, Golin describes a transcoding method performed by receiving a first bitstream of compressed image data having identifiable coding parameters. First motion information is obtained from the first bitstream, and is used to extrapolate second motion information for a second bitstream of compressed image data. The second bitstream, which has one or more parameters different from the parameters of the first bitstream, is provided as a transcoded output.

Golin, however, fails to teach or suggest "detecting *the position information* stored at an address corresponding to a *feature value that is based on a value of the target pixel* of which a motion vector is to be determined or a pixel peripheral to said target pixel of the second frame, the feature value representing said feature of said target pixel," as recited in independent Claim 1.

In rejecting the claimed features directed to the "first detecting means," the Office Action relies on Fig. 4 of Golin. Fig. 4 of Golin, however, as described at cols. 6-7, merely describes the process for calculating a motion vector and fails to teach or suggest detecting position information stored at a specific address, whatsoever, much less the more detailed aspects of this processing, as recited in Claims 1-3.

Further, Swonger and Gaffin, the cited secondary references, fail to remedy the above noted deficiencies in Golin in this regard.

Independent Claim 1 further recites, in part, that the image processing apparatus includes:

...determining means for determining *a centroid of candidate pixels of the first frame* which are identified with the position information detected by the first detecting means; and

second detecting means for detecting a motion vector of the target pixel *from the position of the target pixel and the centroid*.

Independent Claims 2 and 3, while directed to alternative embodiments, recite similar features. Accordingly, the remarks and arguments presented below are applicable to each of independent Claims 1-3.

As described in an exemplary embodiment at p. 26 and Fig. 8 of the specification, when position information of three candidate pixels Pr1 to Pr3 on the reference frame Fr is set at a feature address in the database 71 which correspond to the feature of the target pixel P on the current frame Fc, the absolute differences between the pixel value of the target pixel P and the pixel values of the candidate pixels Pr1 to Pr3 are respectively calculated and a candidate pixel Pr from which the minimum value of the absolute differences is calculated is detected as a reference pixel. Then, a vector that has a starting point at a pixel on the reference frame Fr which corresponds to the target pixel P of the current frame Fc and that has an end point at the detected reference pixel is detected as a motion vector of the target pixel P.

In rejecting the above noted features recited in independent Claim 1, the Office Action relies on col. 5, ll. 49-57 of Golin. This cited portion of Golin describes that, if an x-y plotting of candidate motion vectors shows more than one cluster (i.e., close grouping) of motion vectors, a best motion vector can be calculated for each cluster. This is the centroid, or "center of mass" of the cluster, and a final best motion vector can then be selected from the best motion vectors of the individual clusters.

Thus, Golin describes that representative motion vectors are calculated, and that one of the already calculated motion vectors is selected as representative of "a best motion

vector." In contrast, independent Claim 1 recites that *a centroid of candidate pixels of the first frame* are determined, which are identified with the position information of a target pixel detected by the first detecting means, then, a motion vector is detected *from the position of the target pixel and the centroid*.

Therefore, independent Claim 1 clearly recites that the centroid of candidate pixels is determined is first determined, then a motion vector is detected from the position of the target pixel to the centroid. As noted above, the centroid is determined based on the absolute differences between the pixel value of the target pixel P and the pixel values of the candidate pixels Pr1 to Pr3. Golin fails to teach or suggest this claimed feature, but instead describes that the centroid is determined based on a plurality of motion vectors already detected. Moreover, Golin fails to teach or suggest determining a centroid of candidate pixels of the first frame (e.g., reference frame) *which are identified with the position information* (e.g., of the target pixel of the current frame) *detected by the first detecting means*, as claimed.

Further, Swonger and Gaffin, the cited secondary references, fail to remedy the above noted deficiencies in Golin.
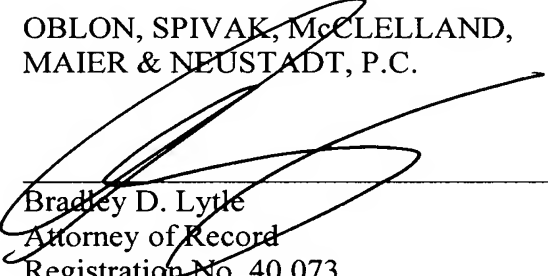
Therefore, Applicants respectfully submit that Golin, Swonger and Gaffin, neither alone, nor in combination, teach or suggest the above differentiated features recited in independent Claim 1.

Accordingly, for at least the reasons discussed above, Applicants respectfully request that the rejection of Claims 1-3 under 35 U.S.C. § 103 be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-3 is patentably distinguishing over the applied references. The present application is therefore believed to be in condition for allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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